AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method of detecting and quantifying subsurface defects ~~(10)~~ in an article ~~(1)~~ made of high strength non magnetisable materials after the use in a high temperature environment, the article ~~(1)~~ exhibiting a crack ~~(8)~~ or gap on a surface ~~(7)~~, the method comprising the steps of

(a) the crack ~~(8)~~ or gap is brazed and

(b) after the brazing operation any remaining braze defect or subsurface crack ~~(10)~~ is detected and quantified by means of a multifrequency scanning eddy current system.

2. (Currently Amended) The method according to claim 1, wherein

- after the brazing operation the brazed areas are inspected on a grid of points by an eddy current probe connected to a frequency scanning eddy current system,

- the signal obtained from the system at each inspected point is analysed by means of an algorithm which fits the said signal with calculated signal obtained from a simple model of the interaction between the probe and a multiple layer material, each layer of which is plane, homogeneous, and characterised by a value of electrical conductivity and

positions of the interface with the adjacent layers, wherein the effect on the signal due to presence of a braze defect or subsurface crack ~~(10)~~ is approximated by a reduction of the electrical conductivity in a layer corresponding to the position of the braze defect or subsurface crack ~~(10)~~ in the thickness of the material,

- from the said algorithm estimates are obtained of the conductivity values and the positions of the interfaces of each layers of the model,

- the presence of braze defect or subsurface crack ~~(10)~~ is detected by comparing the estimated conductivity values obtained from the said algorithm with reference values obtained in the same way on a defect-free component,

- the ligament and the depth of the braze defect or subsurface crack ~~(10)~~ are determined from the estimated positions of the interfaces between the model layers.

3. (Currently Amended) The method according to claim 1 ~~or 2~~, wherein the method is applied to blades or vanes of gas turbines made from a Nickel base superalloy as the article ~~(1)~~.

4. (Currently Amended) The method according to ~~any of the claims 1 to 3~~ claim 1, wherein the distance of the braze defect or subsurface crack ~~(10)~~ from a surface ~~(7)~~ and the depth of the defect ~~(10)~~ is determined.

5. (Currently Amended) The method according to claim 4, wherein local variations of the thickness of the article ~~(1)~~ in the range of penetration of the eddy currents, or the presence or fins or ribs on the inner surface of the article ~~(1)~~, or the presence of an inner layer of air between two airfoils is suppressed as an interfering quantity in the measurement by including in the model one or more layers describing the said geometric features of the article ~~(1)~~.

6. (Currently Amended) The method according to ~~any of the claims 1 to 5~~ claim 1, wherein dependent on the measured extent of the remaining braze defect or subsurface crack ~~(10)~~ after brazing a decision is made concerning the fulfillment of the serviceability of the quality requirements of the braze.

7. (Currently Amended) The method according to ~~any of the claims 1 to 5~~ claim 1, wherein dependent on the extent of the remaining crack ~~(10)~~ after brazing, estimated by the method, a decision is made concerning further usability of the article ~~(1)~~.

8. (Currently Amended) The method according to ~~any of the claims 1 to 7~~ claim 1, wherein the surface of the crack ~~(8)~~ or gap is cleaned from oxides before applying the method.

9. (Currently Amended) The method according to ~~any of the claims 8~~ claim 1, wherein a Flouride-Ion-Cleaning-Method is used for cleaning the surface before applying the process.